START

0012757

December 17, 1990

Meeting Minutes Transmittal/Approval
Unit Managers Meeting: 200-BP-1 Operable Unit
450 Hills Street, Rm 47
October 16, 1990

From/
Appvl.: _____ Date: 12-18-90
Julie K. Erickson, 200-BP-1 Unit Manager, DOE-RL (A6-95)

Appvl.: _____ Date: 12/19/90
Douglas R. Sherwood, 200-BP-1 Unit Manager, EPA (B5-01)

Appvl.: _____ Date 12/18/90
Larry Goldstein, 200-BP-1 Unit Manager, WA Department of Ecology

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Meeting Minutes are attached. Minutes are comprised of the following:

Attachment #1 - Meeting Summary/Summary of Commitments and Agreements
Attachment #2 - Agenda for the Meeting
Attachment #3 - Attendance List
Attachment #4 - Commitments/Agreements Status List
Attachment #5 - Analytical Laboratory Readiness
Attachment #6 - Proposed Schedule for 200-BP-1 Groundwater Monitor Wells
Attachment #7 - Proposed FY 1991 200-BP-1 Work Scope
Attachment #8 - 200-BP-1 Task 6 Activities
Attachment #9 - Cost and Schedule Estimates for the Installation of Surface/Annular Seals
Attachment #10 - Column Leach Test
Attachment #11 - Installation of Surface and Annular Well Seals for the 200-BP-1 Operable Unit; Letter dated October 5, 1990 to Julie Erickson DOE from EPA
Attachment #12 - Well completion Strategy for Borehole 699-49-57B

Prepared by: Doug Fassett Date: 12/18/90
SWEC Support Services

Concurrence by: _____ Date: 12/18/90
WHC RI Coordinator

200-BP-1 Operable Unit Managers Meeting
450 Hills Street, Room 47
October 16, 1990

Distribution:

Donna Lacombe, PRC
Ward Staubitz, USGS
Doug Fassett, SWEC (A4-35)
Jack Waite, WHC (B2-35)
Tom Wintczak, WHC (B2-15)
Mel Adams, WHC (H4-55)
Wayne Johnson, WHC (H4-55)
Rich Carlson, WHC (H4-55)
Brian Sprouse, WHC (H4-22)
Bill Price, WHC (SO-03)
Tim Veneziano, WHC (B2-35)
Ralph O. Patt,
OR Water Resources Dept.
Doug Dunster, Golder Assoc.
Mike Thompson, DOE (A6-95)
Diane Clark, DOE (A5-55)

cc. Ronald D. Izatt (A6-95)
Director, DOE-RL, ERD
Ronald E. Gerton (A6-80)
Director, DOE-RL, WMD
Roger D. Freeberg (A6-95)
Chief, Rstr. Br., DOE-RL/ERD
Steven H. Wisness (A6-95)
Tri-Party Agreement Proj. Mgr
Richard D. Wojtasek (B2-15)
Prgm. Mgr. WHC

Mary Harmon, DOE-HQ (EM-442)

ADMINISTRATIVE RECORD: 200-BP-1; Care of Susan Wray, WHC (H4-51C)

Please inform Doug Fassett (SWEC) of deletions or additions to the distribution list.

Attachment #1

Meeting Summary and Summary of Commitments and Agreements
200-BP-1 Unit Managers Meeting
450 Hills Street, Room 47
October 16, 1990

1. Mark Buckmaster will be the new WHC RI coordinator of 200-BP-1. Rich Carlson (WHC) will be available for assistance.

2. The status of Action Items was discussed. In response to #2BP1.41, a letter was sent from Doug Sherwood to DOE (See Attachment #11).

3. TOC and well design work plan changes were discussed (See Attachment #7). The area directly below the basalt was not water bearing.

4. Steve Trent (WHC) gave a presentation on groundwater monitoring well installation and completion activities (see Attachments #8 and #12). Drilling tasks were summarized. Well 699-49-57B was only screened in the sand layer rather than from the basalt down. Well 50-53-B has the same completion strategy as *described in the new well design.*

5. A presentation was given by WHC and a handout was distributed on cost and scheduled estimates for the installation of surface/annular seals (see Attachment #9).

6. Rich Carlson stated that new well drilling in the 200 Area will begin within one week (by October 23). Doug Sherwood (EPA) stated that EPA would like to see the Health & Safety plan for the well drilling in the 200 Area. EPA also requested the paperwork needed to enter the exclusion zone.

7. Funds will be available for remediation of existing wells.

ACTION ITEM 2BP1.42: Provide EPA and Ecology with the proposal for FY-91 work scope reduction. Action: Julie Erickson

8. The parameters for purge water designation, proposed by Steve Trent, were approved by EPA.

9. *Rich Carlson discussed the proposed 200-BP-1 work scope for FY-91 based on available funding.*

Attachment #2

Agenda
200-BP-1 Unit Managers Meeting
450 Hills Street, Room 47
October 16, 1990

Introduction:

Status:

Action Items

Work Plan

- o TOC
- o Well Design

Remedial Investigation

- o Groundwater Well Construction
- o FY 1991 Budget and Schedule

Issues:

Other Topics:

Agreements and Commitments

Attachment #3

Attendance List
200-BP-1 Operable Unit Managers Meeting
October 16, 1990

NAME	ORG.	O.U. Role	PHONE
Hunt, Joseph	Brown & Cald.	Ecology Contrt.	503-244-7005
Erickson, Julie	DOE-RL	Unit Manager	509-376-3603
Cline, Chuck	Ecology	Geohydrology.	206-438-7556
Cross, Steve	Ecology	CERCLA Unit	206-459-6675
Goldstein, Larry	Ecology	Unit Manager	206-438-7018
Osweiler, Mike	Ecology	~~100-DR-1 Coord.~~ CERCLA Unit	206-438-7016
Einan, Dave	EPA		509-376-3883
Sherwood, Doug	EPA	Unit Manager	509-376-9529
Staubitz, Ward	USGS	EPA Support	206-593-6510
Lacombe, Donna	PRC	EPA Support	206-624-2692
Fassett, Doug	SWEC	GSSC	509-376-3136
Fryer, Bill	SWEC	DOE Support	509-376-3136
King, Joe	SWEC	GSSC	509-376-9707
Ayres, Jeff	WHC	100-HR-1	509-376-3918
Buckmaster, Mark	WHC	Asst. RI Coord.	509-376-1792
Carlson, Rich	WHC	RI Coordinator	509-376-9529
Delaney, C.D.	WHC	Support	509-376-9235
Patterson, Jim	WHC	ER Program	509-376-0568
Singleton, Kevin	WHC	Geo. Support	509-376-4526
Trent, Steve	WHC	Support	509-376-7226

Attachment #4

Commitments/Agreements Status List
200-BP-1 Operable Unit
October 16, 1990

Item No.	Action	Status
2BP1.35:	The question of unsealed wells will be incorporated into the joint (EPA/Ecology) letter concerning well remediation, rehabilitation. Action: Doug Sherwood	*Closed* According to Chuck Cline the package should be available soon. (7/18/90) All parties agreed that wells in areas where no contamination is found may be temporarily cased and capped. (9/20/90)
2BP1.38:	Determine the USGS position on the feasibility of performing geophysical logging through cased wells. Action: Ward Staubitz for EPA (7/18/90, BP1.UMM)	Open EPA has requested a meeting with WHC and Battelle to determine data and equipment availability and data gathering plans. A one and a half hour presentation on how geophysics will be used in light of the BP work plan will be given. The defensibility of qualitative logs will be addressed. The meeting is desired on Nov. 8. (10/17/90)
2BP1.39	Deep bore-holes through the cribs *are scheduled to begin* in November. Leach tests will be done soon after that. Describe the leach test methodology for 200-BP-1 at the next UMM meeting. Action: Rich Carlson (8/16/90, BP1.UMM)	*Closed* (10/16/90)

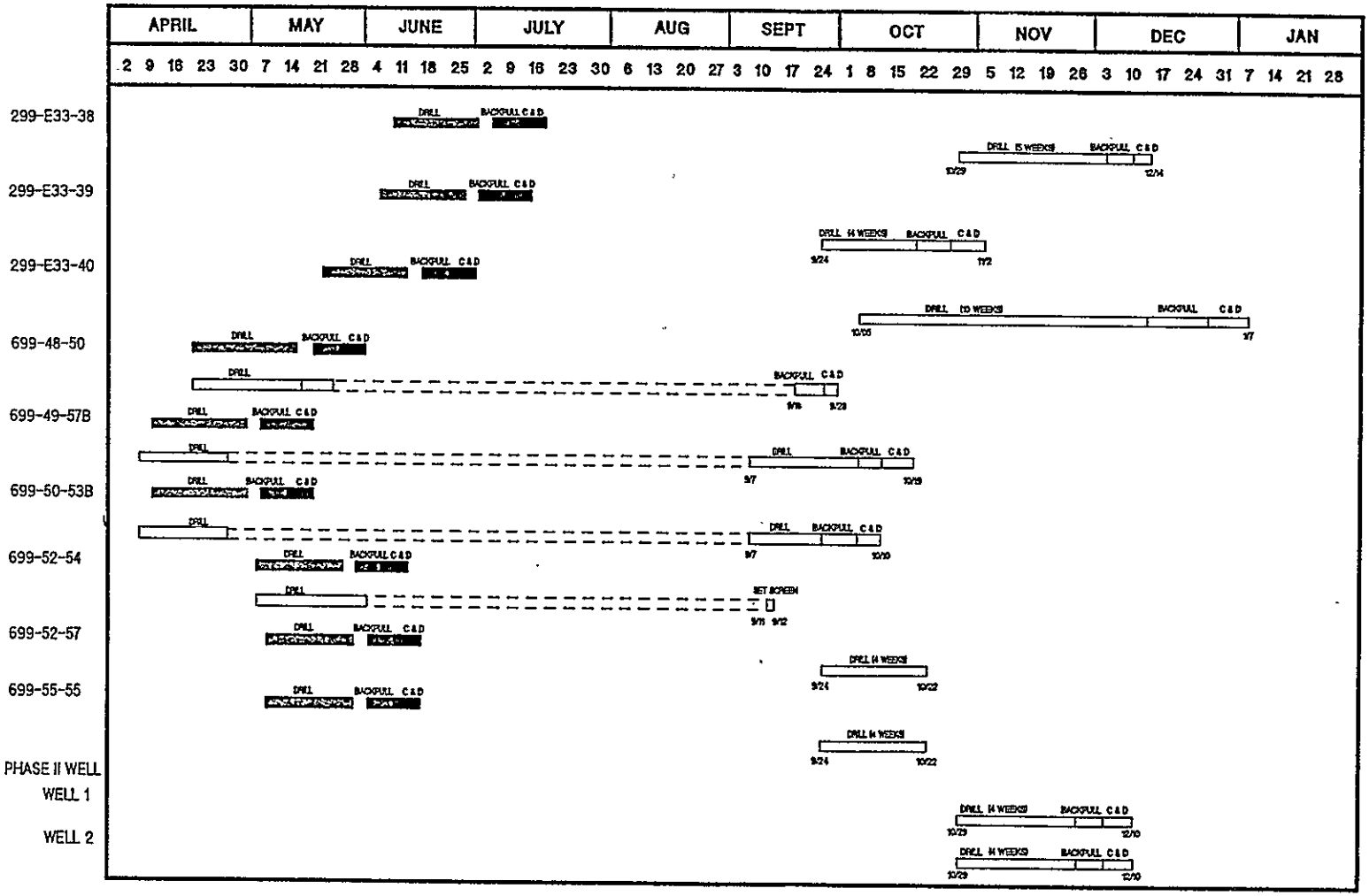
2BP1.40	Status what the current logging capability is and how and when logging personnel will be mobilized. Action: Rich Carlson (9/20/90, BP1.UMM)	Open
2BP1.41	EPA will provide a list of wells that require short and full annular seals. The list will be provided by September 28. Action: Doug Sherwood (9/20/90, BP1.UMM)	Closed The list of wells and a letter were received from Doug Sherwood (see Attachment #11). (10/17/90)
2BP1.42	Provide EPA and Ecology with the proposal for the work scope reduction. Action: Julie Erickson (10/16/90, BP1.UMM)	New

ANALYTICAL LABORATORY READINESS

- WHC and PNL personnel have continued to meet over the past month to resolve issues related to the TPP, QAPP, and Technical/Administrative Procedures.
- The TPP is currently being signed by WHC personnel.
- It is expected that we will begin to initiated signatures on the QAPP this week.
- The QA readiness review was initated last week. WHC concerns remain regarding laboratory readiness in operator familiarity with technical and administrative procedures.
- Part of the above may be explained in the manner in which PNL currently does business (project by project).
- PNL performed employee training to the WHC SOW and PNL TPP/QAPP requirements for this project last Monday.
- The PNL 325 lab should be ready to accept samples next week to be analyzed for the 200-BP-1 parameters of interest list.

Attachment 6

PROPOSED SCHEDULE FOR 200-BP-1 GROUNDWATER MONITORING WELLS PROJECT 90E-GFW-121



ASSUMPTIONS

1) LAB IS APPROVED SEPT 24TH.
2) FOUR DRILL RIGS CAN BE USED AT ONE TIME AND BE SUPPORTED.
3) THREE DRILL RIGS CAN BE SUPPORTED AT ONE TIME FOR CHEM/RAD. SAMPLING.
4) WELLS 699-52-54, 699-52-57 AND 699-55-55 WILL NOT HAVE PERMANENT MATERIALS INSTALLED.
5) BASALT LAYER IN WELL 699-49-57B, 699-50-53B AND 299-E33-40 CAN BE DRILLED IN 10 DAYS.
6) RESTART OF DRILLING ACTIVITIES WAS SEPT. 7TH.

KEH INITIAL SCHEDULE

PROPOSED SCHEDULE 9/17/90

SEPTEMBER 17, 1990
N. WAGNER / GRNDWTR.GAL

Attachment 7

PROPOSED FY 91 200-BP-1 WORK SCOPE

- o Complete installation of nine groundwater monitoring wells
- o Perform well remediation activities on existing wells
- o Sample and analyze groundwater from existing & new wells
- o Perform sorption tests
- o Perform aquifer tests on the 3 uncased wells

UNDER ADDITIONAL FY 91 FUNDING

- o Perform crib/vadose zone boring (three holes)
- o Column leach tests
- o Phase II wells

200-BP-1 OPERABLE UNIT - FISCAL YEAR 1991 WORK SCOPE

Task	Title	Comments
1	Project Management	
6	Installation of Monitoring Wells	Reduced Scope - No RLS, gamma-gamma, and neutron-epithermal-neutron logging.
7	Groundwater Sampling and Analysis	Reduced Scope - No well remediation, 2 quarters of groundwater sampling instead of 3.
11	Hydraulic Pump Tests	Reduce Scope - 3 pump tests instead of the proposed 20.

In addition, the 200-BP-1 Phase I feasibility study will continue on a reduced scope.

200-BP-1 OPERABLE UNIT - FISCAL YEAR 1991 WORK SCOPE REDUCTION

Task	Title
2	Source Sampling and Analysis
3	Surface and Near Surface Sampling and Analysis
4	Vadose Zone Sampling and Analysis
10	Column Leach Tests
12	Sorption Tests
13	Baseline Risk Assessment
14	Evaluation and Reporting

Attachment 8

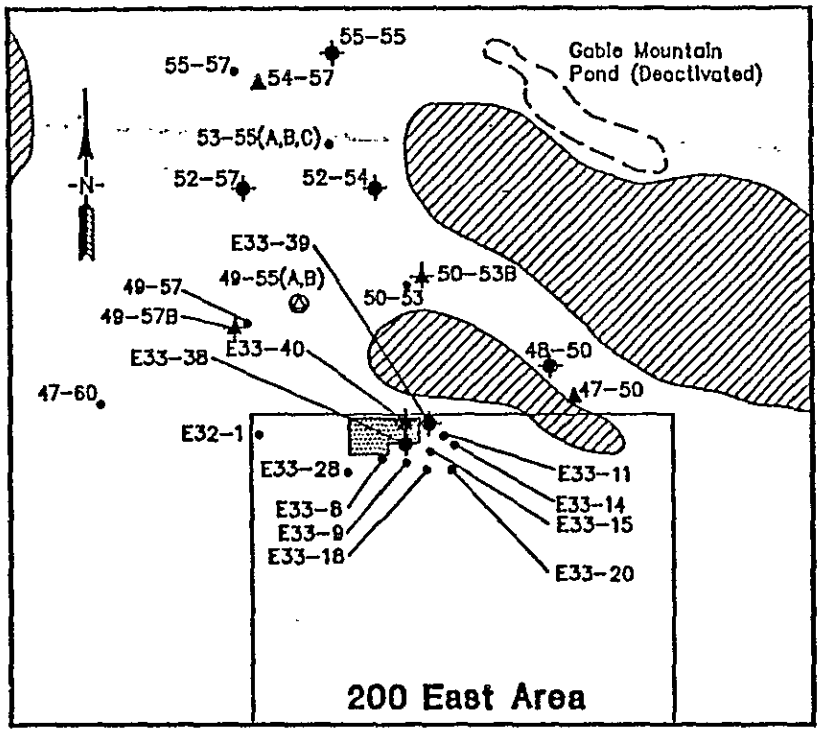
200-BP-1 TASK 6 ACTIVITIES

- **CURRENTLY DRILLING TWO MONITORING WELLS**

699-49-57 B

699-50-53 B

- **UPPERMOST CONFINED SYSTEM**
- **CURRENTLY DRILLING IN THE ELEPHANT MOUNTAIN BASALT**



Basalt Outcrops Above Water Table, as Inferred 6/84

200-BP-1 Operable Unit

Existing Unconfined Aquifer Monitoring Well

Existing Rattlesnake Ridge Confined Aquifer Monitoring Well

Existing Monitoring Well Cluster in Both the Unconfined and Confined (Ratttlesnake Ridge) Aquifer

Anticipated Location for Proposed Monitoring Well in the Confined Aquifer (Rattlesnake Ridge) During Stage 1

Anticipated Location for Proposed Monitoring Well in the Unconfined Aquifer During Stage 1

0 1 Mile

0 1 Kilometer

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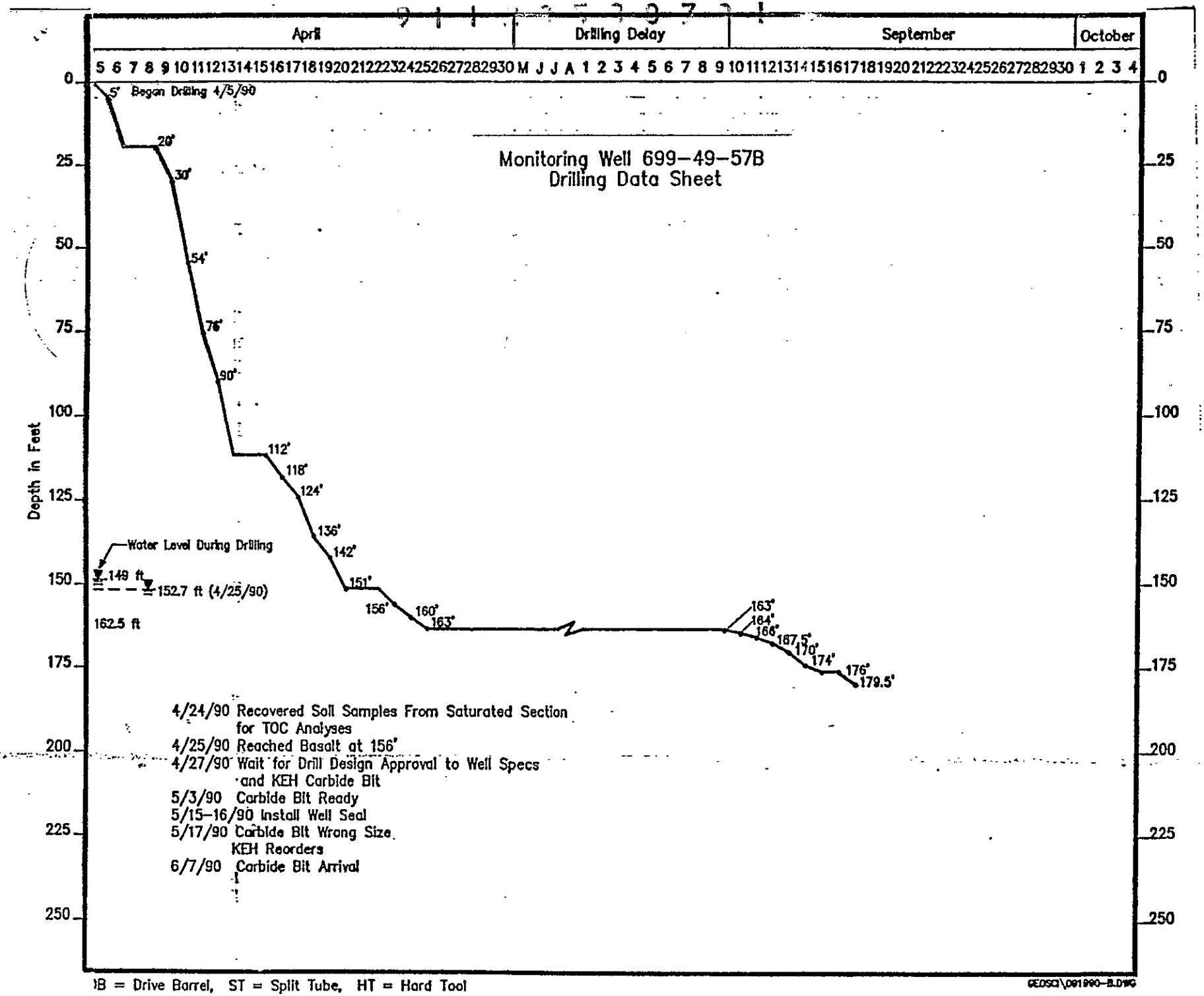
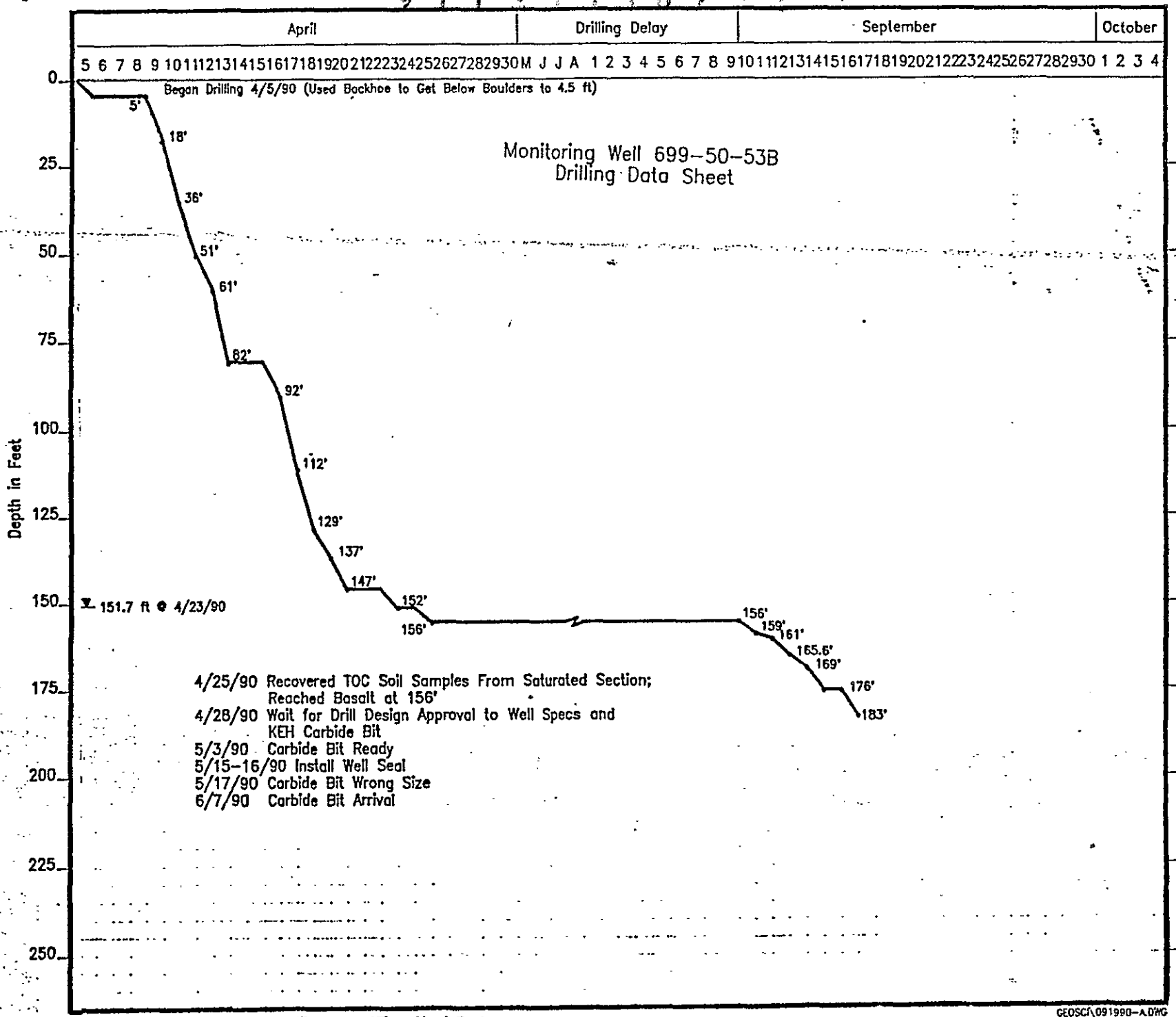

April
Drilling Delay
September
October
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 M J J A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4
Monitoring Well 699-49-57B
Drilling Data Sheet
Depth in Feet
0
25
50
75
100
125
150
175
200
225
250
5' Began Drilling 4/5/90
20'
30'
54'
76'
90'
112'
118'
124'
136'
142'
151'
156'
160'
163'
163'
164'
166'
187.5'
170'
174'
176'
179.5'
Water Level During Drilling
149 ft
152.7 ft (4/25/90)
162.5 ft
4/24/90 Recovered Soil Samples From Saturated Section for TOC Analyses
4/25/90 Reached Basalt at 156'
4/27/90 Wait for Drill Design Approval to Well Specs and KEH Carbide Bit
5/3/90 Carbide Bit Ready
5/15-16/90 Install Well Seal
5/17/90 Carbide Bit Wrong Size. KEH Reorders
6/7/90 Carbide Bit Arrival
)B = Drive Barrel, ST = Split Tube, HT = Hard Tool
GEOSCI\091990-B.DWG


April
Drilling Delay
September
October
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 M J J A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4
Began Drilling 4/5/90 (Used Backhoe to Get Below Boulders to 4.5 ft)
Monitoring Well 699-50-53B
Drilling Data Sheet
Depth in Feet
0
25
50
75
100
125
150
175
200
225
250
5'
18'
36'
51'
61'
82'
92'
112'
129'
137'
147'
152'
156'
156'
159'
161'
165.6'
169'
176'
183'
151.7 ft @ 4/23/90
4/25/90 Recovered TOC Soil Samples From Saturated Section; Reached Basalt at 156'
4/28/90 Wait for Drill Design Approval to Well Specs and KEH Carbide Bit
5/3/90 Carbide Bit Ready
5/15-16/90 Install Well Seal
5/17/90 Carbide Bit Wrong Size
6/7/90 Carbide Bit Arrival
DB = Drive Barrel, ST = Split Tube, HT = Hard Tool
GEOSCI\091990-A.DWG

OTHER CONSTRUCTION/COMPLETION ACTIVITIES

- **699-52-54**

  TEMPORARY 8-INCH SCREEN SET

  CONSTITUENTS FOR PURGE WATER DETERMINATION

  CYANIDE
  NITRATE
  COBALT-60
  TECHNETIUM-99
  TOTAL ALPHA
  TOTAL BETA

  * CONTAMINANTS POTENTIALLY 10X MCL

- **699-48-50**

  WELL COMPLETION ACTIVITIES INITIATED

200-BP-1 TASK 6 ACTIVITIES

DRILLING ACTIVITIES

699-50-53B: TOTAL DEPTH (225') ACHIEVED ON 10/12/90

699-49-57B: TOTAL DEPTH (230') ACHIEVED ON 10/8/90

699-52-57: DRILLING INITIATED ON 9/28/90,
CURRENT DEPTH OF BOREHOLE - 90'

699-55-55: DRILLING INITIATED ON 10/1/90
CURRENT DEPTH OF BOREHOLE - 78'

(Depths are below ground surface)

10/16/90

OTHER CONSTRUCTION/COMPLETION ACTIVITIES

- 699-48-50: ESSENTIALLY COMPLETED

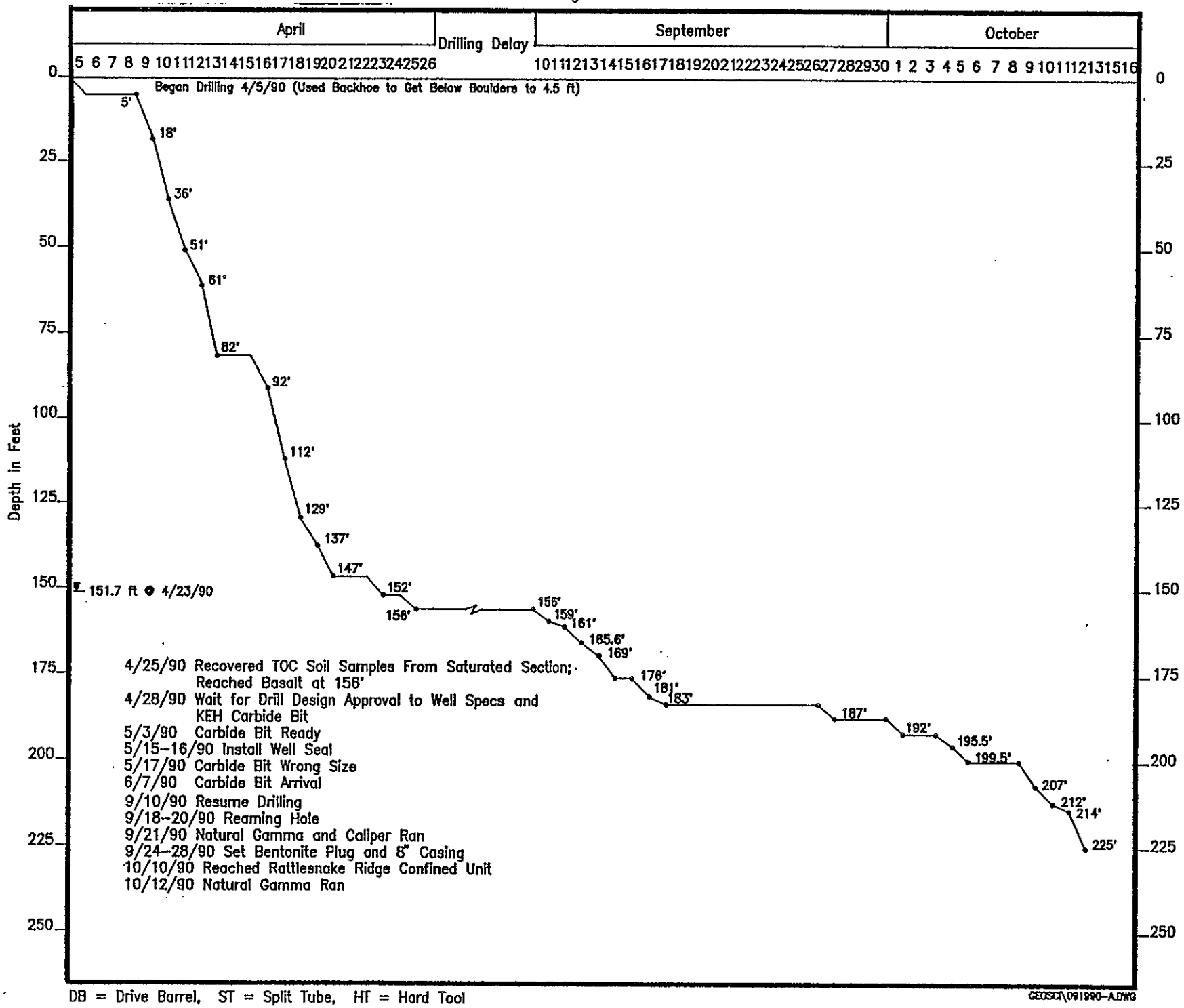
- 699-50-53B: SCREEN SET (215-225')
  4 IN. STAINLESS STEEL CASING SET

- 699-49-57B: SCREEN SET (220-230')
  4 IN. STAINLESS STEEL CASING SET

(Depths are below ground surface)

10/16/90

Monitoring Well 699-50-53B
Drilling Data Sheet



PURGE WATER DETERMINATION

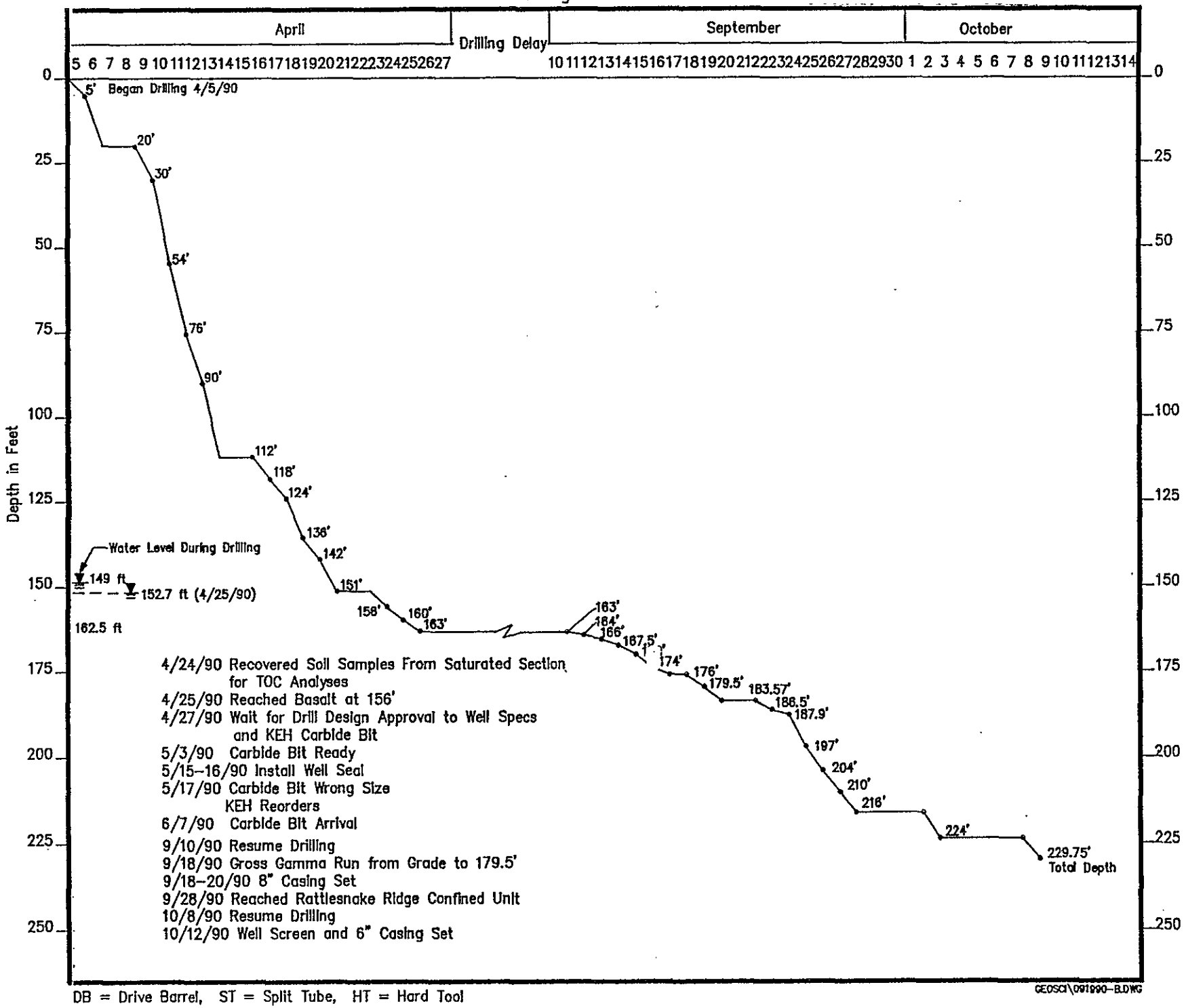
FOR 200-BP-1 AQUIFER TEST WELLS

CONSTITUENTS WHICH MAY BE 10X MCL:

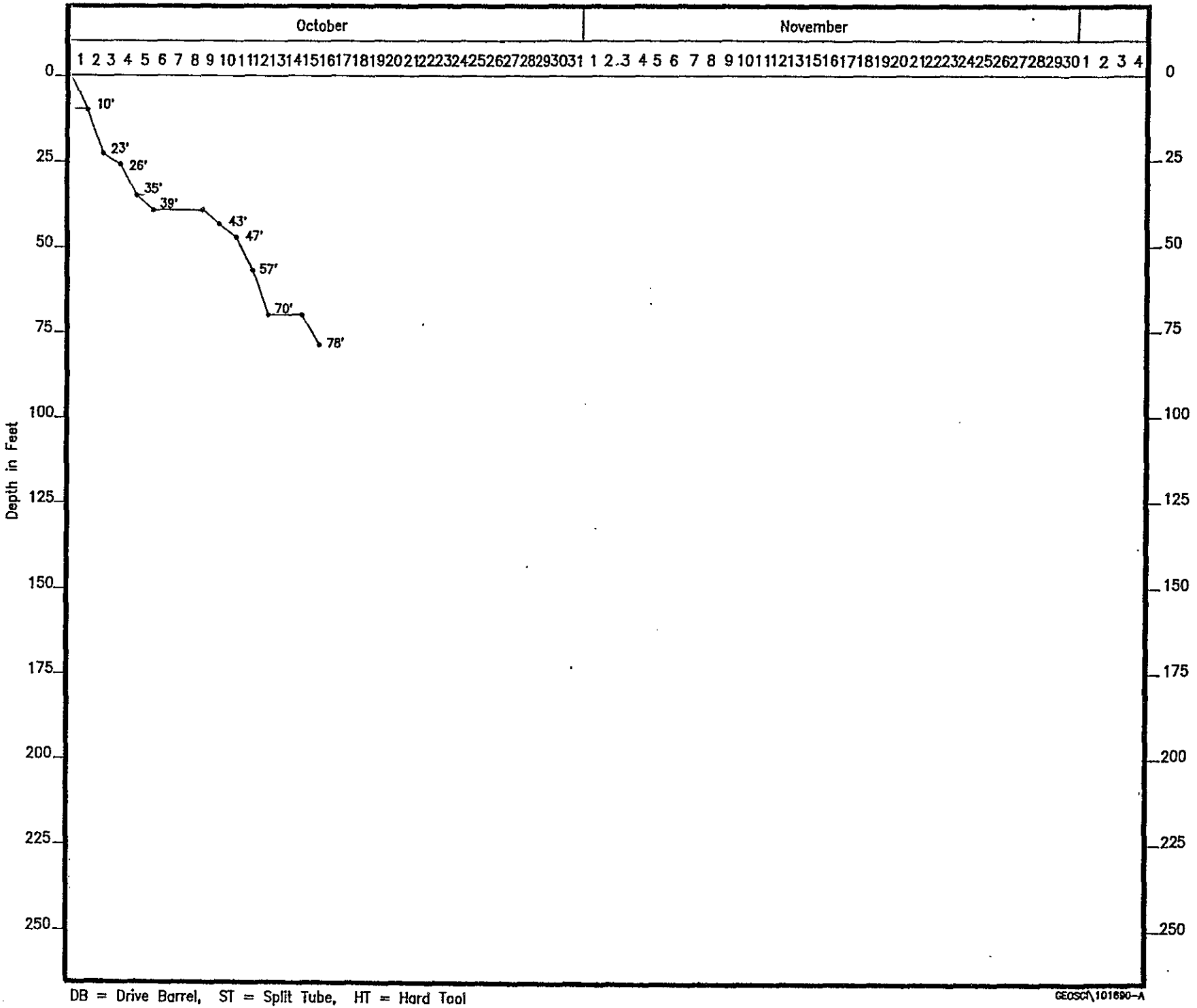
- CYANIDE
- NITRATE
- TOTAL ALPHA
- TOTAL BETA

10/16/90

Monitoring Well 699-49-57B
Drilling Data Sheet



9 1 1 2 Monitoring Well 689-55-55 9
Drilling Data Sheet



DB = Drive Barrel, ST = Split Tube, HT = Hard Tool

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Attachment 9

COST AND SCHEDULE ESTIMATES

FOR

INSTALLATION OF SURFACE/ANNULAR SEALS

9/19/90

COST ESTIMATE FOR INSTALLING SURFACE/ANNULAR WELL SEALS

METHOD:	Excavate around existing casing to a depth of 18 feet below top of ground surface. Place a 20 foot length of 12 inch ID carbon steel casing over the existing 8 inch casing stick-up. Backfill excavation around 12 inch and compact. Pressure grout annulus between the 8 and 12 inch and remove the 12 inch casing.		
ASSUMPTIONS:	Existing 250 foot well completed with 8 inch ID carbon steel casing. No unusual conditions are encountered. The well is not located in a radition area. A backhoe is used for excavation (1:1 slope).		
TIME FRAME:	3 Days		
MATERIALS:	20 foot of 12 inch ID carbon steel casing		$ 300
	Grout (incl. 50% excess)		200
	Surface Pad and Barrier Posts (cement, rebar, steel posts)		200
LABOR:	KEH	(provide equipment, personnel, supervision, health and safety)	6000
	WHC	EFSG Field/Office Support	2,000
		Health Physics Support (HPT)	800
WASTE HANDLING/DISPOSAL: Includes sampling, transport, and disposal of soil and excess cement/water.			5000

Cost Summary:	Materials	700
	Labor	8,800
	Waste Handling/Disposal	5,000
	Sub Total:	$ 14,500
	25% Contingency:	3,625
	Total:	$ 18,125

9/19/90

COST ESTIMATE FOR INSTALLING SURFACE/ANNULAR WELL SEALS

METHOD:	Excavate around existing casing to a depth of 18 feet below top of ground surface. Backfill excavation with concrete.		
ASSUMPTIONS:	Existing 250 foot well completed with 8 inch ID carbon steel casing. No unusual conditions are encountered. The well is not located in a radition area; therefore, the excavated soil can be spread over the site or hauled to a gravel pit. A backhoe is used for excavation (1:1 slope). Concrete is delivered from a batch plant and placed directly from the truck.		
TIME FRAME:	5 Days		
MATERIALS:	Grout (incl. 50% excess)		$ 23,300
	Misc. (rebar)		1,000
	Surface Pad and Barrier Posts (cement, rebar, steel posts)		200
LABOR:	KEH	(provide equipment, personnel, supervision, health and safety)	10,000
	WHC	EFSG Field/Office Support	3,300
		Health Physics Support (HPT)	800
WASTE HANDLING/DISPOSAL: Includes sampling, transport, and disposal of soil and excess cement/water.			5,000
Cost Summary:	Materials		$ 24,500
	Labor		14,100
	Waste Handling/Disposal		4,000
		Sub Total:	$ 43,600
		25% Contingency:	10,900
		Total:	$ 54,500

9/19/90

COST ESTIMATE FOR INSTALLING SURFACE/ANNULAR WELL SEALS

METHOD:	Over drill existing casing. Pressure grout annulus between open hole and casing.		
ASSUMPTIONS:	250 foot well completed with 8 inch ID carbon steel casing. No unusual conditions are encountered. the well is not located in a rediation area. The soil matrix allows auger penetration to required depth and is stable enough to complete grouting. An auger rig is used to overdrill casing with a hollow stem auger.		
TIME FRAME:	4.5 Days		
MATERIALS:	Grout		$ 200
	Misc. (auger bit inserts)		500
	Surface Pad and Barrier Posts (cement, rebar, steel posts)		200
LABOR:	KEH	(provide equipment, personnel, supervision, health and safety)	9,000
	WHC	EFSG Field/Office Support	3,000
		Health Physics Support (HPT)	1,000
		Site Services (haul water)	500
WASTE HANDLING/DISPOSAL: Includes sampling, transport, and disposal of soil and excess cement/water.			5,000
Cost Summary:	Materials		900
	Labor		13,500
	Waste Handling/Disposal		5,000
		Sub Total:	$ 19,400
		25% Contingency:	4,850
		Total:	$ 24,250

9/19/90

COST ESTIMATE FOR INSTALLING SURFACE/ANNULAR WELL SEALS

METHOD:	Perforate upper 18 feet of 8 inch casing, install 4 inch ID carbon steel casing to 18 feet below ground level, and pressure grout annulus.		
ASSUMPTIONS:	No unusual conditions are encountered. The well is not located in a radition area. A cable tool rig is used for perforating casing, installing liner, and placing grout.		
TIME FRAME:	4 Days		
MATERIALS:	20 feet of 4 inch ID carbon steel casing		$ 100
	Grout (including 50% excess)		100
	Misc. (perforator knives, cement basket)		1,000
	Surface Pad and Barrier Posts (cement, rebar, steel posts)		200
LABOR:	KEH	(provide equipment, personnel, supervision, health and safety)	8,000
	WHC	EFSG Field/Office Support	2,600
		Health Physics Support (HPT)	1,000
		Site Services (haul water)	500
WASTE HANDLING/DISPOSAL: Includes sampling, transport, and disposal of soil and excess cement/water.			5,000

Cost Summary:	Materials	$ 1,400
	Labor	12,100
	Waste Handling/Disposal	5,000
	Sub Total:	$ 18,500
	25% Contingency:	4,625
	Total:	$ 23,125

9/19/90

COST ESTIMATE FOR INSTALLING SURFACE/ANNULAR WELL SEALS

METHOD:	Perforate entire length of casing, install 4 inch ID carbon steel casing to to just above top of water, and pressure grout the annulus between casing and liner.		
ASSUMPTIONS:	250 foot well completed with 8 inch ID carbon steel casing. No unusual conditions are encountered. The well is not located in a radition area. A cable tool rig is used for perforating casing, installing liner, and placing grout.		
TIME FRAME:	10 Days		
MATERIALS:	230 feet of 4 inch ID carbon steel casing		$ 1,000
	Grout (including 50% excess)		1,000
	Misc. (perforator knives, cement basket, casing centralizers)		2,500
	Surface Pad and Barrier Posts (cement, rebar, steel posts)		200
LABOR:	KEH	(provide equipment, personnel, supervision, health and safety)	20,000
	WHC	EFSG Field/Office Support	6,600
		Health Physics Support (HPT)	3,300
		Site Services (haul water)	2,000
WASTE HANDLING/DISPOSAL: Includes sampling, transport, and disposal of soil and excess cement/water.			5,000
Cost Summary:	Materials		4,700
	Labor		31,900
	Waste Handling/Disposal		5,000
		Sub Total:	$ 41,600
		25% Contingency:	10,400
		Total:	$ 52,000

9/19/90

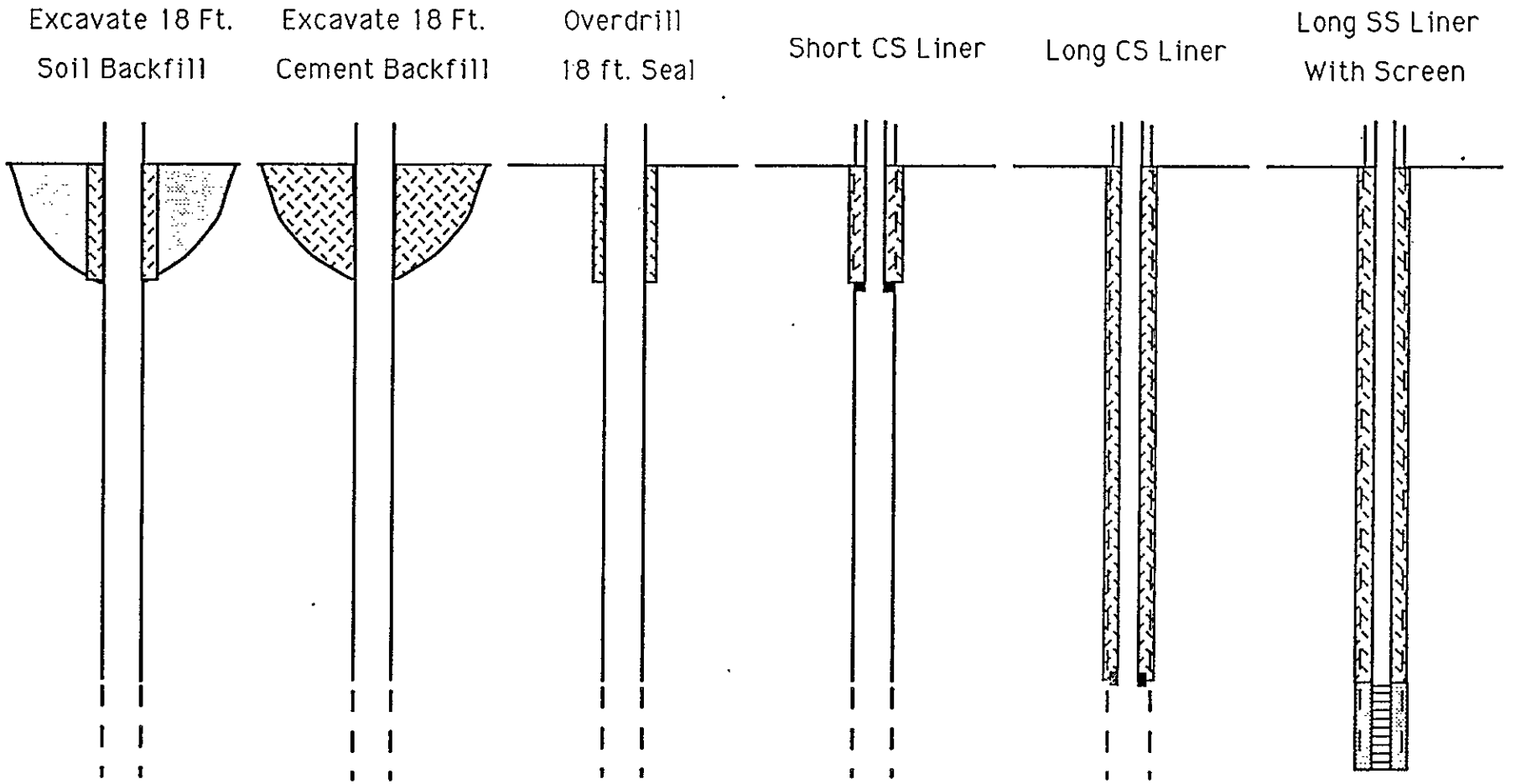
COST ESTIMATE FOR INSTALLING SURFACE/ANNULAR WELL SEALS

METHOD:	Perforate entire length of casing, install 4 inch ID stainless steel screen and casing to bottom of well, place filter pack and pressure grout annulus.		
ASSUMPTIONS:	Existing 250 foot well completed with 8 inch ID carbon steel casing. No unusual conditions are encountered. The well is not located in a radition area. A cable tool rig is used for perforating casing, installing liner and screen, and placing grout.		
TIME FRAME:	11 Days		
MATERIALS:	230 feet of 4 inch ID stainless steel casing		$ 5,600
	20 foot 4 inch ID stainless steel screen		1,000
	Grout (cement and bentonite-incl. 50% excess)		1,500
	Misc. (perforator knives, centralizers, sand and gravel pack material)		5,000
	Surface Pad and Barrier Posts (cement, rebar, steel posts)		200
LABOR:	KEH	(provide equipment, personnel, supervision, health and safety)	22,000
	WHC	EFSG Field/Office Support	7,300
		Health Physics Support (HPT)	3,300
		Site Services (haul water)	2,000
WASTE HANDLING/DISPOSAL: Includes sampling, transport, and disposal of soil and excess cement/water.			5,000

Cost Summary:	Materials	$ 13,300
	Labor	34,600
	Waste Handling/Disposal	5,000
	Sub Total:	$ 52,900
	25% Contingency:	13,225
	Total:	$ 66,125

9/19/90

SUMMARY OF PROPOSED METHODS FOR INSTALLATION OF SURFACE/ANNULAR SEALS



9/19/90

WELL NO.	ZONE	SCRUB	PUMP TYPE	PR NO.	INTAKE DEPTH	COMMENTS	WATER COLUMN LENGTH	PURGE TANKS	STATUS	DATE DEVELOPED	DEVELOP ORDER	POST DEV. NTU'S	GAL. PUMPED
2-E32-1	NO	YES	SUBMERSIBLE	90-119		READY TO DEVELOP		1	DELETED FROM PROJECT				
2-E33-1	YES	YES	SUBMERSIBLE	90-120	228.00	SURFACE ZONE.	11.50	1	DEVELOPED	9/5/90	17	3.6	84.0
2-E33-3	YES	YES	SUBMERSIBLE	90-121	228.00	SURFACE ZONE		1	DEVELOPED	9/7/90	18	.8	876.0
2-E33-4	YES	YES	NONE	90-122	228.00	SURFACE ZONE	7.54	NONE	DEVELOPED	9/13/90	20	.5	453.0
2-E33-5	YES	YES	SUBMERSIBLE	90-123	235.00	SURFACE ZONE	12.67	1	DEVELOPED	8/29/90	16	2.0	660.0
2-E33-7	YES	YES	NONE	90-124	228.00	SURFACE ZONE	10.56	NONE	DEVELOPED	9/17/90	21	.3	393.0
2-E33-8	NO	YES	SUBMERSIBLE	90-125		READY TO DEVELOP		1	DELETED FROM PROJECT				
2-E33-9	YES	YES	NONE	90-126		ASBESTOS/RAD. ZONE!		NONE	DELETED FROM PROJECT				
2-E33-11	YES	YES	NONE	90-127		CONTAMINATED!		NONE	DELETED FROM PROJECT				
2-E33-12	NO	YES	HYDROSTAR	90-128	323.00	<5 NTU NOT MET	193.70	NONE	READY TO SAMPLE	8/17/90	13	27.0	1964.0
2-E33-13	YES	YES	NONE	90-129	228.00	CONTAMINATED/R.ZONE!	12.54	NONE	DEVELOPED	9/11/90	19	2.3	412.0
2-E33-14	NO	YES	HYDROSTAR	90-130	222.86		10.40	NONE	READY TO SAMPLE	8/14/90	11	1.2	206.0
2-E33-15	YES	YES	NONE	90-131	233.00	CONTAMINATED!	30.34	NONE	DEVELOPED	9/19/90	22	3.0	1010.0
2-E33-18	YES	YES	SUBMERSIBLE	90-132	253.00	SURFACE ZONE.	23.97	1	READY TO SAMPLE	8/21/90	14	1.0	1118.0
2-E33-20	YES	YES	NONE	90-133		CAVE IN POTENTIAL!		NONE	DELETED FROM PROJECT				
2-E33-24	YES	YES	SUBMERSIBLE	90-134	239.00	SURFACE ZONE.	18.80	1	DEVELOPED	8/27/90	15	.7	812.0
2-E33-26	NO	YES	HYDROSTAR	90-135	235.00		10.11	1	READY TO SAMPLE	8/16/90	12	.7	888.0
2-E33-28		N/A	HYDROSTAR	90-136	274.88	NO MAINT. REQUIRED.		1	READY TO SAMPLE				
2-E34-1	NO	YES	HYDROSTAR	90-137	229.00		23.78	1	READY TO SAMPLE	8/13/90	10	3.0	386.3
6-47-50	NO	YES	HYDROSTAR	90-105	271.00	<5 NTU REQ. NOT MET		1	READY TO SAMPLE	6/6/90	3	5.6	1470.0
6-47-60	NO	N/A	SUBMERSIBLE	90-106		NO MAINT. REQUIRED.		1	READY TO SAMPLE				
6-49-55A	NO	YES	HYDROSTAR	90-107	133.71	DTW-126.11,DTB-142.0	15.89	2	READY TO SAMPLE	6/26/90	9	2.9	101.0
6-49-55B	NO	YES	HYDROSTAR	90-108	201.00	<5 NTU REQ. NOT MET		NONE	READY TO SAMPLE	5/31/90	1	9.2	2000.0
6-49-57	NO	N/A	SUBMERSIBLE	90-109	155.00	NO MAINT. REQUIRED.		2	READY TO SAMPLE				
6-50-53	NO	YES	HYDROSTAR	90-110	157.00	DTW-152.45,DTB-163.0	10.58	1	READY TO SAMPLE	6/11/90	4	3.3	299.0
6-53-55A	NO	YES	HYDROSTAR	90-111	221.57	DTW-172.47,DTB-260.4	87.93	1	READY TO SAMPLE	6/12/90	6	2.7	350.9
6-53-55B	NO	YES	HYDROSTAR	90-112	242.00			NONE	READY TO SAMPLE	6/4/90	2	4.1	1126.0
6-53-55C	NO	YES	HYDROSTAR	90-113	201.67	DTW-173.00,DTB-223.0	50.00	NONE	READY TO SAMPLE	6/12/90	5	4.0	225.7
6-54-57	NO	YES	HYDROSTAR	90-114	241.45	DTW-172.20,DTB-322.0	149.80	NONE	READY TO SAMPLE	6/20/90	8	3.2	1051.0
6-55-57	NO	YES	HYDROSTAR	90-115	171.47	DTW-163.65,DTB-179.9	16.25	NONE	READY TO SAMPLE	6/14/90	7	3.0	287.0

Well Remediation Action Items

THE FOLLOWING REQUIRE RESOLUTION PRIOR TO THE COMMENCEMENT OF WELL REMEDIATION ACTIVITIES

- METHOD TO BE USED FOR INSTALLATION OF SURFACE SEAL
- METHOD TO BE USED FOR INSTALLATION OF FULL ANNULAR SEAL
- IDENTIFY WELLS REQUIRING SURFACE SEAL ONLY
- IDENTIFY WELLS REQUIRING FULL ANNULAR SEAL
- IDENTIFY WELLS REQUIRING REDUCTION IN LENGTH OF OPEN INTERVAL ACROSS AQUIFER
- METHOD FOR REDUCING OPEN INTERVAL ACROSS AQUIFER - CEMENT? SAND? BENTONITE?
  - Method used needs to be acceptable as part of abandonment
- WHAT IS REQUIREMENT FOR PLACING A PLUG AT THE BOTTOM OF EACH WELL?
  WHAT TYPE OF PLUG IS REQUIRED? CEMENT? BENTONITE?

Attachment 10

COLUMN LEACH TEST

PURPOSE: To investigate the mobility of vadose zone contaminants caused by infiltrating rainwater

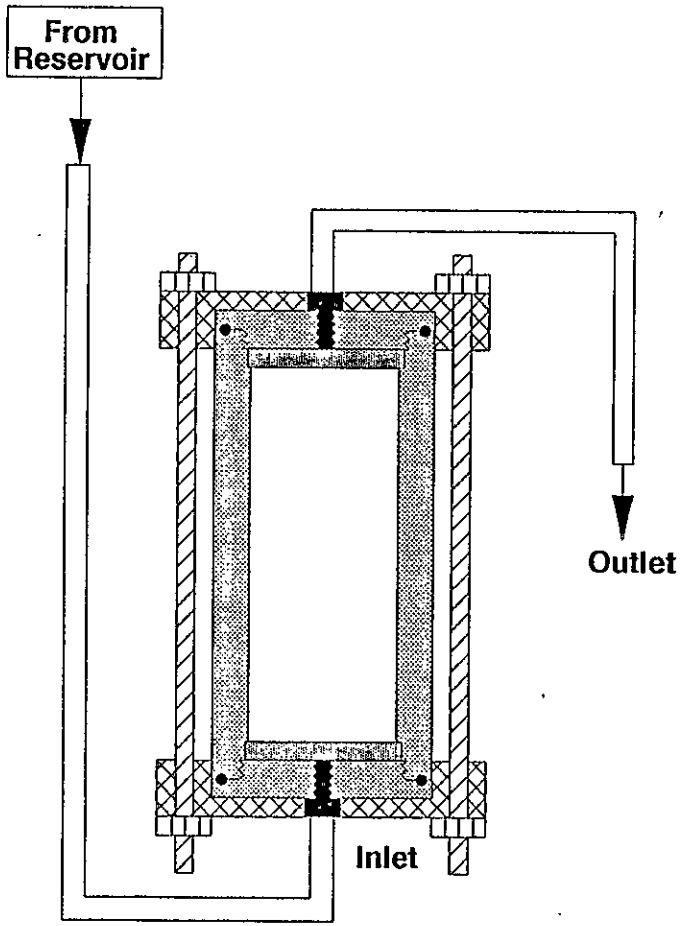
(1) Identify mobile contaminants in waste zone

(2) Determine transport coefficients through soil column

COLUMN LEACH PROCEDURE

- SAMPLE PREPARATION
  - Compacted Samples
  - Undisturbed or Intact Samples
- COLLECTION OF EFFLUENT
  - Preservation specified by Test or Work Plan
- DATA TO BE RECORDED
- SATURATED LEACH PROCEDURE COMPLETE
- UNSATURATED LEACH PROCEDURE IN PREPARATION
  - Ready 2/91

SATURATED FLOW

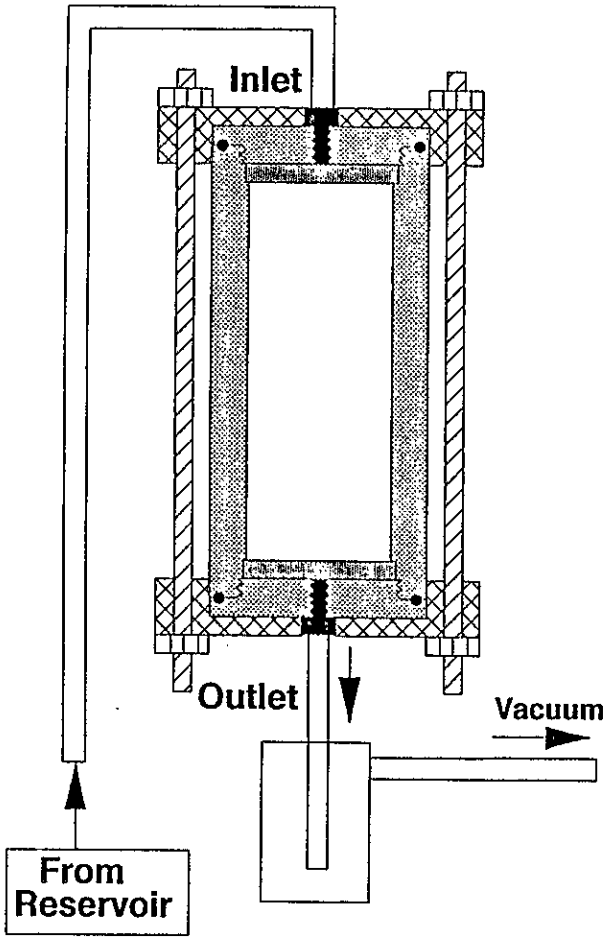


(+) Better than Batch/Bottle Leaching
(+) Upward Flow to eliminate trapped air
(+) Simple to run
(+) Hydraulic Conductivity measured
(+) Head controls flow rate

(-) Not Conservative compared to Field Conditions

(-) Solution to Solid Ratio too high by a Factor of about 4

UNSATURATED FLOW



(+) Closer to field conditions

(-) Solid/Solution Ratio about 2X field

(-) Flow rate under external control

(-) Pore Volume not a priori

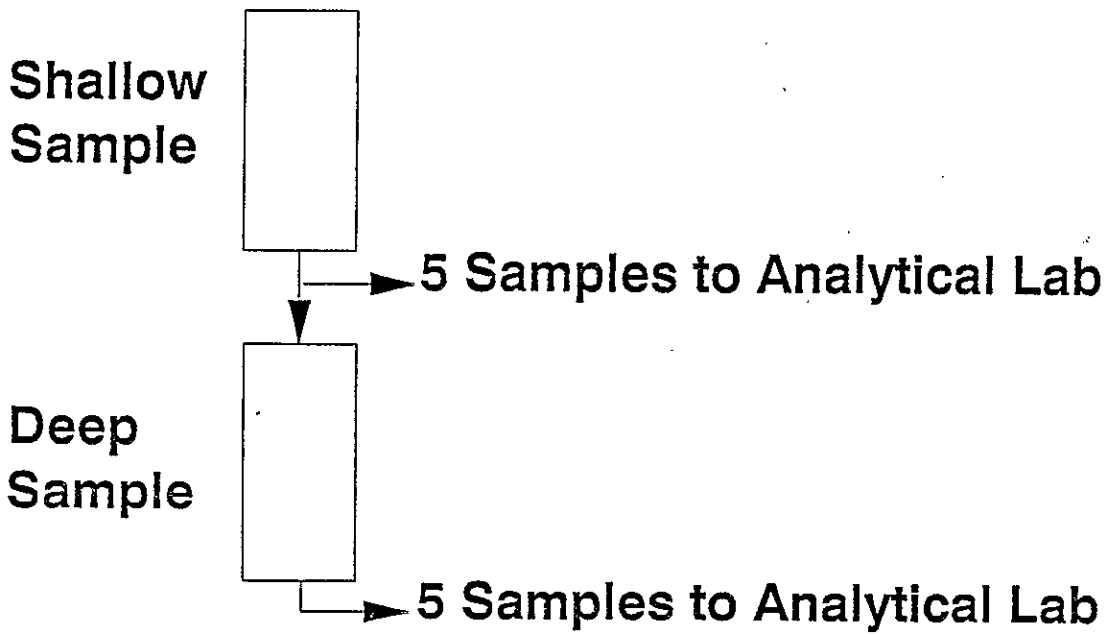
(-) Vacuum required to prevent ponding

(-) Severe evaporation at low water content

(-) Hydraulic Conductivity not measured

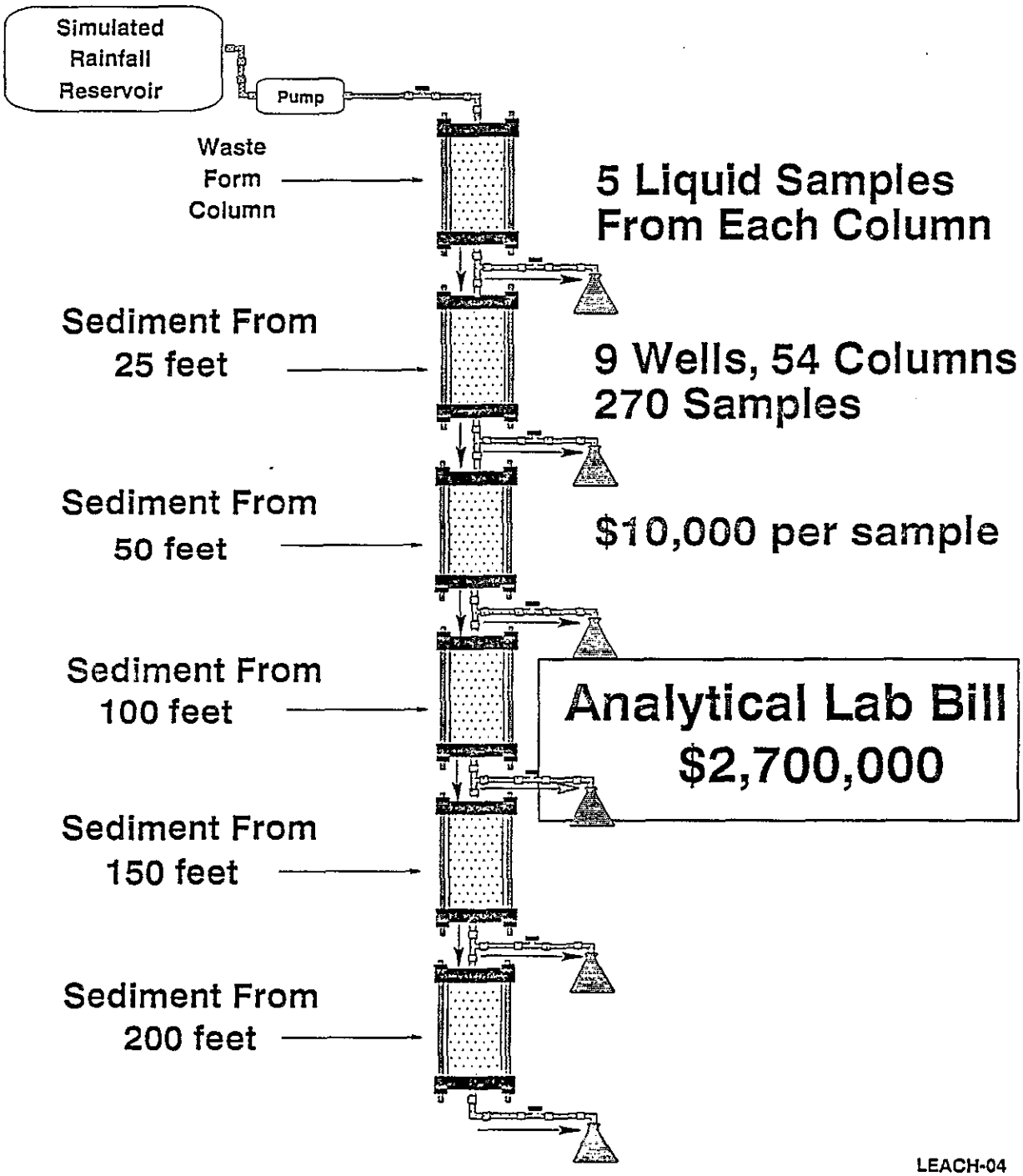
COLUMN LEACH TEST

(2 waste samples, 4 columns total)



20 Liquid Samples Analyzed
4 Solid Samples Analyzed
$240,000 Analytical Lab Bill

200-BP-1 WORKPLAN
COLUMN LEACH CONCEPT



LEACH-04

COLUMN LEACH PROCEDURE

UNSATURATED CONDITIONS

- Field Moisture Content - < 10% by volume
- Unsat. Column Moisture - ~ 20% by volume
  (One Bar Vacuum Limit for Sampling)
- Sat. Column Moisture - ~ 10% by volume

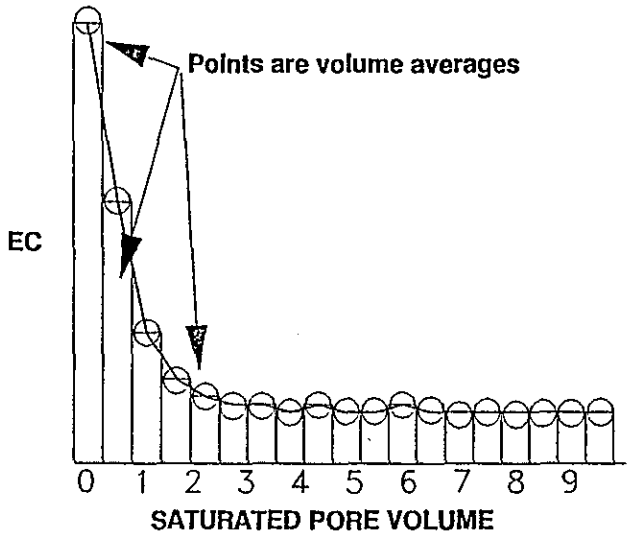
- Dose Rate Dependence
  0 to 25 mr/hr Can Do Unsaturated Leach
  25 to 100 mr/hr Have to do Saturated Leach
  > 100 mr/hr Hot Cell

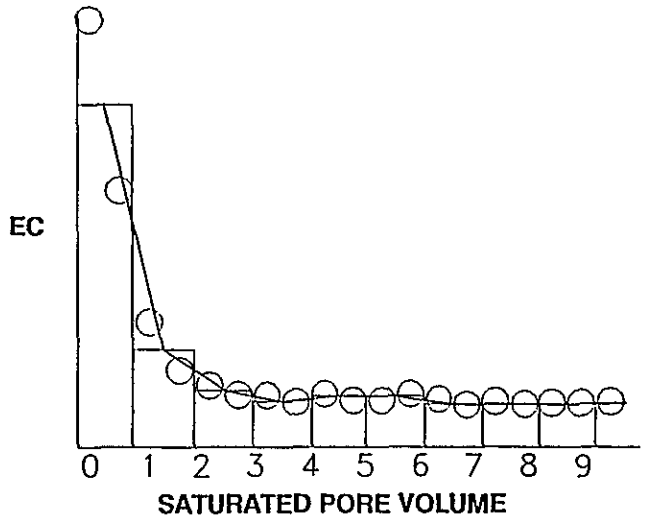
- Equipment is Commercially Available
  and has been ordered

COLUMN LEACH PROCEDURE

SIMULATED UNSATURATED CONDITIONS

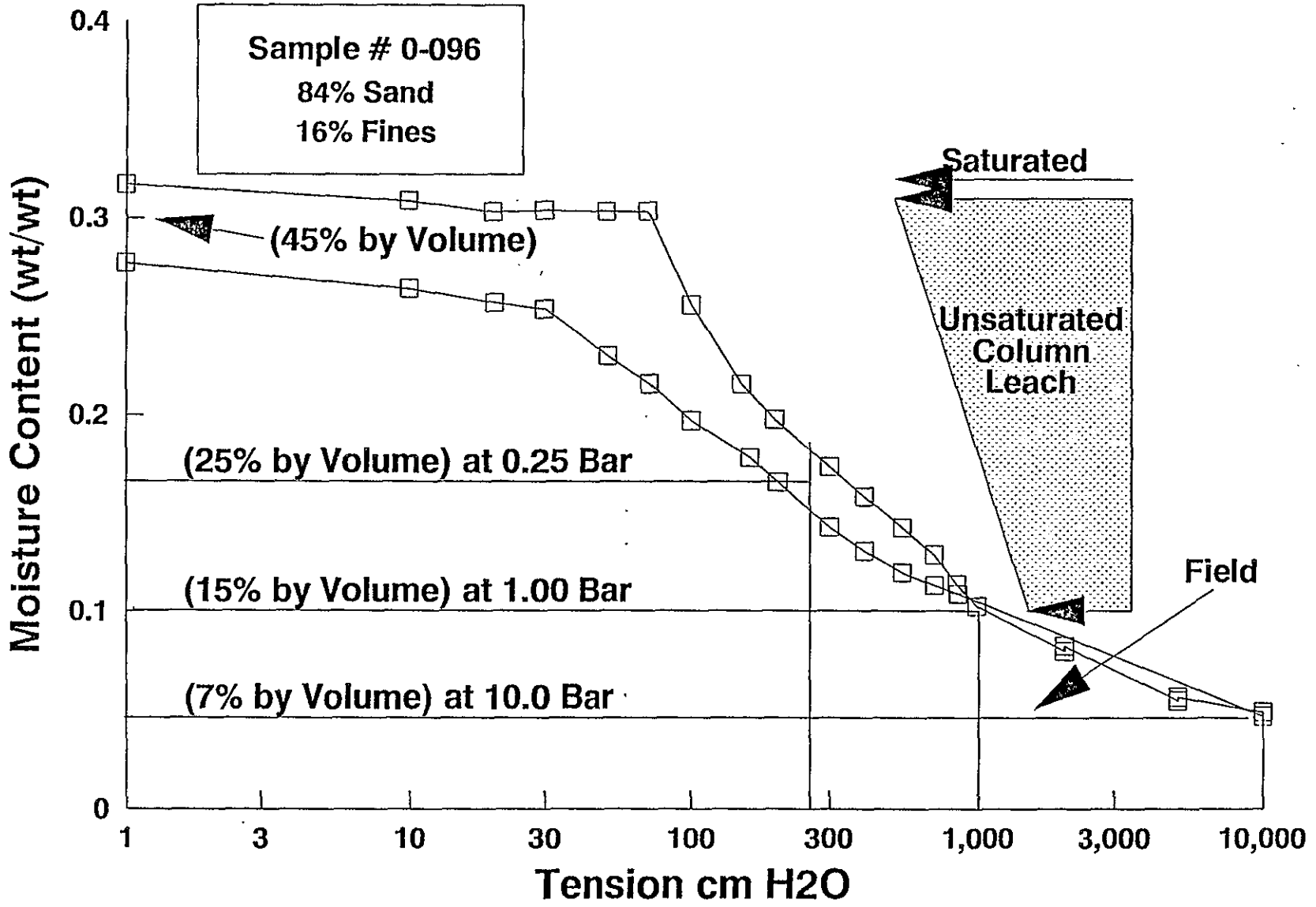
Smaller Sample Volumes





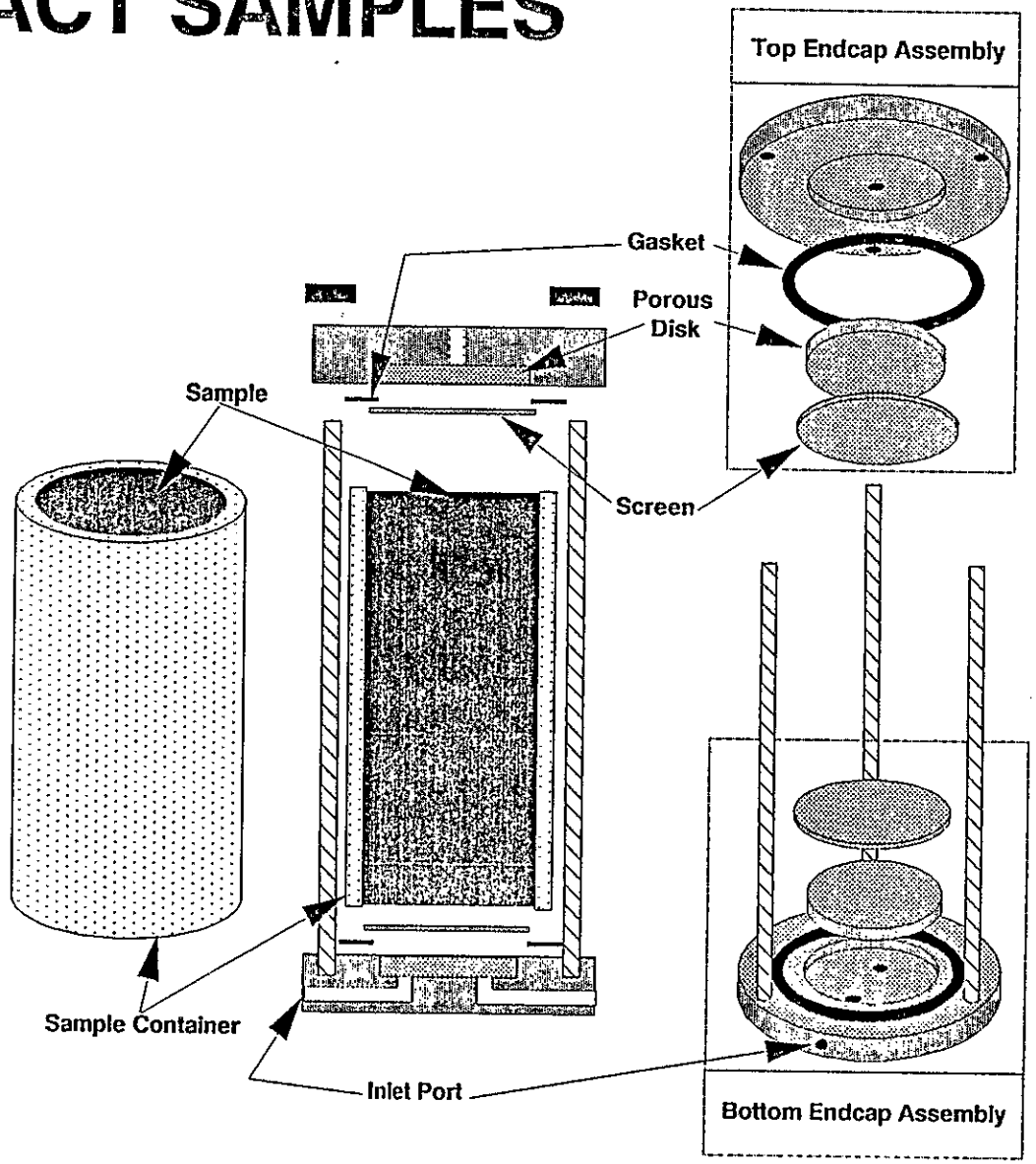
COLUMN LEACH TESTING

- o TASK 10B, Saturated Test Procedure Ready
- o Test Scheduled for May 1991
- o Unsaturated Column Leach Test Ready Feb 91
- o Can Simulate Unsaturated Leach With Saturated Leach Smaller Sample Volumes


Sample # 0-096
84% Sand
16% Fines
Saturated
(45% by Volume)
Unsaturated
Column
Leach
(25% by Volume) at 0.25 Bar
(15% by Volume) at 1.00 Bar
(7% by Volume) at 10.0 Bar
Field
Moisture Content (wt/wt)
0.4
0.3
0.2
0.1
0
1
3
10
30
100
300
1,000
3,000
10,000
Tension cm H2O

LEACH-10

INTACT SAMPLES



~~200P1.35~~

United States
Environmental Protection
Agency

Region 10
Hanford Project Office
712 Swift Boulevard, Suite 5
Richland WA 99352

Washington

EPA

— Attachment #11 —

October 5, 1990

Julie K. Erickson
Unit Manager
U.S. Department of Energy
P.O. Box 550, A6-95
Richland, Washington 99352

Re: Installation of Surface and Annular Well Seals for the 200-BP-1 Operable Unit

Dear Ms. Erickson:

Upon review of the information provided by Westinghouse Hanford Company (WHC) during the September unit manager's meeting, the Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and their contractors have reviewed the proposed methods for installation of surface and/or full annular seals. We have also reviewed the well locations, water column lengths, and other relevant aspects of existing well construction. As requested by the Department of Energy and WHC, we are providing written guidance on a well-by-well basis for the installation of surface or full annular seals and a general summary for reducing the open interval across the aquifer in wells with long screened intervals.

For the wells requiring only surface seals, EPA and Ecology believe that either the overdrill method or the shortliner method with grout injection represents an acceptable method of installation. The choice of which method is used will depend on the near-surface geology and particle size distribution as these factors influence the applicability of the overdrill method. This decision should be made by the RI coordinator or field services personnel who are most familiar with the field conditions.

Surface seals may be placed by overdrilling around the existing casing or by pressure injection grouting (squeeze grouting) from within the existing casing through perforations into the adjacent formation. If the method of overdrilling is used for the installation of a surface seal, a minimum 2 inch annulus will be required to be filled with grout to a depth of 18 feet below ground surface. The grout will be placed by tremie tube method (as described in WAC 173-160-075) from the bottom up.

If surface seal is to be installed by placing the grout from within the existing casing, the use of squeeze grouting will be required. Sqeeze grouting will be accomplished by utilizing a method to seal the well head and inject the grout through perforations in the existing casing, to a depth of 18 feet below ground surface, into the adjacent formation. Perforations shall be at least four equal distant cuts per row and at least one row per foot. Each cut shall be at least 1-1/2 inches long. The volume of grout placed by the squeeze method shall equal at least 2 annular volumes. An annular volume is calculated as a 2-inch void volume around the casing from the surface to a depth of 18 feet. Grout emplaced by the squeeze method shall be injected in a single lift, unless the pressure required to inject the grout exceeds 40 psi, at which time the injection may cease. No squeeze grouting will be performed within 25 feet of any buried facility/structure (e.g., pipelines, tanks, cribs, utility boxes, etc.).

Placement of grout by the tremie tube method for the installation of full annular seals greater than 50 feet in length in existing wells is acceptable as sufficient pressure will be created to ensure the well is sealed.

For wells with excessively long screened intervals or long water columns, EPA, Ecology, and their contractors recommend that those wells be filled to shorten the screened interval to 15-20 feet. In the 200-BP-1 Operable Unit, 30 feet appears to be a more appropriate length for the saturated screened interval due to the likely continued decline in water table elevations resulting from the decrease in liquid discharges in the 200 Area.

The method used to shorten the saturated screened interval should utilize sand as the major fill material. On top of the sand, a plug of bentonite and sand mix shall be placed with a top layer of gravel to limit the resuspension of the bentonite clay. Placement of these layers will likely be dependent on existing well construction and would be left to the discretion of the RI coordinator or the field services representative.

Upon eventual abandonment of the well, the top of the interval filled with sand shall be considered the bottom of the well and abandonment activities will commence from that depth.

Table 1 represents a well-by-well summary of the modifications required for the long-term use of existing wells in the 200-BP-1 Operable Unit. Please let me know if you require additional clarification on the remediation of existing wells in this operable unit. I can be reached at 376-9529.

Sincerely,

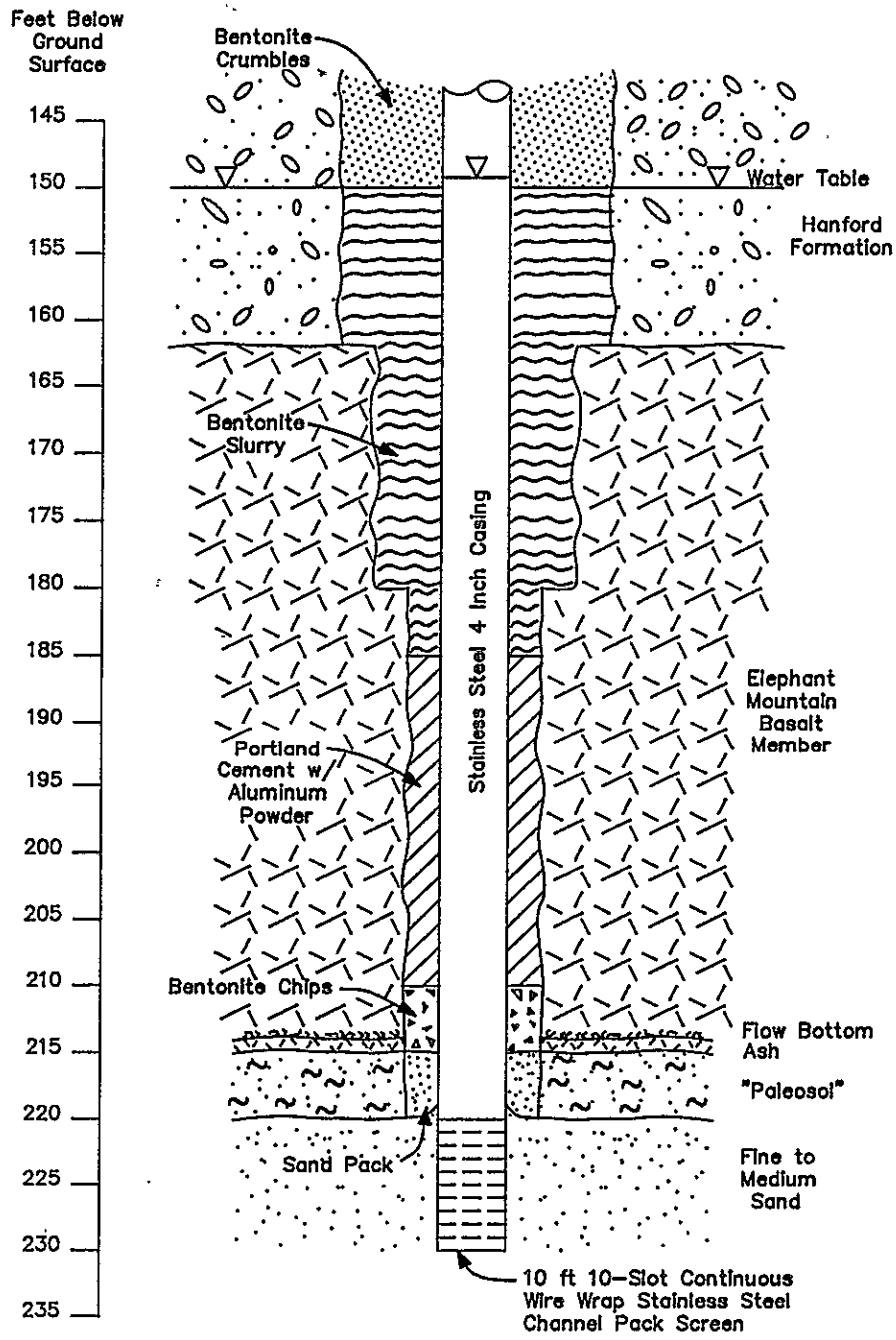
Douglas R. Sherwood
Unit Manager

Enclosure
cc: C. Cline/L. Goldstein, Ecology
G. Hofer, EPA
W. Staubitz, USGS
Administrative Record - 200-BP-1 Operable Unit

TABLE 1. 200-BP-1 EXISTING WELL MODIFICATION SUMMARY

WELL #	SURFACE SEAL ONLY	FULL SEAL	SHORTEN WATER COLUMN
2-E33-1	No (A)	No	No
2-E33-3	No (A)	No	No
2-E33-4	No (A)	No	No
2-E33-5	No (A)	No	No
2-E33-7	No (A)	No	No
2-E33-12	Yes	No	Yes
2-E33-13	No	Yes	No
2-E33-14	Yes	No	No
2-E33-15	Yes	No	No
2-E33-18	Yes	No	No
2-E33-24	Yes	Yes	No
2-E33-26	Yes	No	No
2-E33-28	No	No	No
2-E34-1	Yes	No	No
6-47-50	Yes	No	Yes
6-47-60	Yes	No	No
6-49-55A	Yes	No	No
6-49-55B	Yes	No	Yes
6-45-57	Yes	No	No
6-50-53	Yes	No	No
6-53-55A	Yes	No	Yes
6-53-55B	Yes	No	Yes
6-53-55C	Yes	No	Yes
6-54-57	Yes	No	Yes
6-55-57	Yes	No	No

(A) These wells have been constructed with a Webster Completion and require the installation of a surface pad and posts.



GEOSCI\101590-B

Idealized Completion of Well 699-49-57B

Attachment #12

WELL COMPLETION STRATEGY FOR BOREHOLE 699-49-57B

Hydrogeologic information obtained upon penetration of the Rattlesnake Ridge Interbed in borehole 699-49-57B indicates that the basalt flow bottom is thin (one to two feet thick) and produces little (if any) water. Upon penetration of the flow bottom, a split tube sampler was driven for TOC samples and lithologic description. The lithology encountered immediately below the basalt included a 12 inch thick "baked" ash unit and a 2-3 feet thick indurated paleosol. Neither the ash or paleosol units produced noticeable volumes of water while drilling. Below the paleosol, a fine to medium grained unconsolidated sand body was penetrated. The borehole was extended approximately 10 feet into the sand body. While drilling the sand body, water levels in the borehole increased to approximately the same level as the static water level in the unconfined aquifer, indicating that a significant water producing zone had been penetrated.

The well screen for 699-49-57B will be installed in the fine to medium grained sand body below the paleosol unit. This sand body represents the first significant water producing zone in the Rattlesnake Ridge Interbed encountered in this borehole. The attached figure depicts the idealized completion strategy for borehole 699-49-57B.

200-BP-1 Operable Unit Managers Meeting
450 Hills Street, Room 47
October 16, 1990

Distribution:

Donna Lacombe, PRC
Ward Staubitz, USGS
Doug Fassett, SWEC (A4-35)
Jack Waite, WHC (B2-35)
Tom Wintczak, WHC (B2-15)
Mel Adams, WHC (H4-55)
Wayne Johnson, WHC (H4-55)
Rich Carlson, WHC (H4-55)
Brian Sprouse, WHC (H4-22)
Bill Price, WHC (S0-03)
Tim Veneziano, WHC (B2-35)
Ralph O. Patt,
OR Water Resources Dept.
Doug Dunster, Golder Assoc.
Mike Thompson, DOE (A6-95)
Diane Clark, DOE (A5-55)

cc. Ronald D. Izatt (A6-95)
Director, DOE-RL, ERD
Ronald E. Gerton (A6-80)
Director, DOE-RL, WMD
Roger D. Freeberg (A6-95)
Chief, Rstr. Br., DOE-RL/ERD
Steven H. Wisness (A6-95)
Tri-Party Agreement Proj. Mgr
Richard D. Wojtasek (B2-15)
Prgm. Mgr. WHC

Mary Harmon, DOE-HQ (EM-442)

H4-22

ADMINISTRATIVE RECORD: 200-BP-1; Care of Susan Wray, WHC ~~(H4-51C)~~

Please inform Doug Fassett (SWEC) of deletions or additions to the distribution list.